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NUCLEAR WEAPONS

Opportunities Exist to Improve the Budgeting, Cost Accounting, and Management Associated with the Stockpile Life Extension Program



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Highlights

Highlights of [GAO-03-583](#), a report to Congressional Requesters

Why GAO Did This Study

As a separately organized agency within the Department of Energy (DOE), the National Nuclear Security Administration (NNSA) administers the Stockpile Life Extension Program, whose purpose is to extend, through refurbishment, the operational lives of the weapons in the nuclear stockpile. NNSA encountered significant management problems with its first refurbishment. NNSA has begun three additional life extensions. This study was undertaken to determine the extent to which budgetary, cost accounting, and other management issues that contributed to problems with the first refurbishment have been adequately addressed.

What GAO Recommends

GAO recommends that NNSA undertake a number of actions to improve the budgeting, cost accounting, and management associated with the Stockpile Life Extension Program. Those actions are, among other things (1) including the Stockpile Life Extension Program as a formal program in NNSA's annual budget; (2) establishing a cost accounting process that accumulates, tracks, and reports the full costs of each refurbishment; and (3) implementing a series of management actions related to improving planning, organization, and oversight of cost and schedule. NNSA recognized the need to change how the program is managed and agreed with GAO's recommendations.

www.gao.gov/cgi-bin/getrpt?GAO-03-583.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Robin N. Nazzaro at (202) 512-3841 or nazzaror@gao.gov.

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What GAO Found

GAO found that NNSA's budget for the Stockpile Life Extension Program has not been comprehensive or reliable. For instance, the fiscal year 2003 budget for this program was not comprehensive because it did not include all activities necessary to successfully complete each of the refurbishments. As a result, neither NNSA nor the Congress was in a position to properly evaluate the budgetary tradeoffs among the refurbishments in the program.

NNSA does not have a system for tracking the full costs associated with the individual refurbishments. Instead, NNSA has several mechanisms that track a portion of the refurbishment costs, but these mechanisms are used for different purposes, include different types of costs, and cannot be reconciled with one another. As a result, NNSA lacks information regarding the full cost of the refurbishment work that can help identify cost problems as they develop or when management intervention in those cost problems may be necessary.

Finally, NNSA does not have an adequate planning, organization, and cost and schedule oversight process. With respect to planning, NNSA has not, for instance, consistently developed a formalized list of resource and schedule conflicts between the individual refurbishments in order to systematically resolve those conflicts. Regarding organization, NNSA has not, for example, clearly defined the roles and responsibilities of those officials associated with the refurbishments or given the refurbishments' managers proper project/program management training required by DOE standards. Finally, NNSA has not developed an adequate process for reporting cost and schedule changes or developed performance measures with sufficient specificity to determine the progress of the three refurbishments that GAO reviewed. As a result, NNSA lacks the means to help ensure that the refurbishments will not experience cost overruns potentially amounting to hundreds of millions of dollars or encounter significant schedule delays.

B-61 Bombs to be Refurbished



Source: NNSA.

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Abbreviations

DOE	Department of Energy
GAO	General Accounting Office
NNSA	National Nuclear Security Administration
SFFAS	Statement of Federal Financial Accounting Standards

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United States General Accounting Office
Washington, D.C. 20548

July 28, 2003

Congressional Requesters

Nuclear weapons have been and continue to be an essential part of the nation's defense strategy. However, the end of the Cold War has caused a dramatic shift in how the nation maintains its planning and support for such weapons. Instead of designing, testing, and producing new nuclear weapons, the strategy has shifted to maintaining the existing nuclear weapons stockpile indefinitely. To accomplish this goal, in January 1996, the Department of Energy (DOE) created the Stockpile Life Extension Program. Now administered by the National Nuclear Security Administration (NNSA), which was created in October 1999 as a separately organized agency within DOE, this program intends to use a standardized approach for planning and conducting nuclear weapons refurbishment activities to extend the weapons' operational lives.¹ While complete cost data on the Stockpile Life Extension Program does not exist, NNSA requested \$476 million in fiscal year 2004 for life extension program activities.

Within NNSA, the Office of Defense Programs is responsible for administering the Stockpile Life Extension Program. For those nuclear weapons that are refurbished, this office must (1) determine which components, such as the high explosives package, will need refurbishment to extend each weapon's life; (2) design and produce the necessary components; (3) install the components in the weapons; and (4) certify that the changes do not adversely affect the safety and reliability of the weapons. Because research and development is needed to refurbish the nuclear weapons, this program requires a coordinated effort among the design laboratories and production facilities that comprise the nation's nuclear weapons complex.

As of May 1, 2003, according to NNSA officials, three nuclear weapons were undergoing research and development activities prior to the commencement of refurbishment production—the W-80 warhead, the B-61 bomb, and the W-76 warhead. The W-80 warhead is designed to be carried on a cruise missile launched from an attack submarine or a B-52 bomber

¹Though NNSA is a separately organized agency within DOE, NNSA Policy Letter NAP-1, dated May 21, 2002, stipulates that DOE directives are applicable to NNSA unless or until a NNSA policy letter is provided.

and its first unit is scheduled for refurbishment production beginning in February 2006. The B-61 bomb is designed to be carried on the B-52 or B-2 bomber. Its first unit is scheduled for refurbishment production beginning in June 2006. The B-61 also has a nonstrategic variation for use on the F-15 and F-16 aircraft. The W-76 warhead is designed to be carried on the Trident II missile. Its first unit is scheduled for refurbishment production beginning in September 2007.

One nuclear weapon already has begun refurbishment production—the W-87 strategic warhead, which is designed to be carried on the land-based Peacekeeper missile. In December 2000, we reported that the W-87 had experienced significant design and production problems that increased its refurbishment costs by over \$300 million and caused schedule delays of about 2 years.² At the heart of many of the problems that contributed to this outcome were an inadequate Office of Defense Programs management process and unclear leadership, which prevented the Office from adequately anticipating and mitigating the problems that arose. We reported that, for the W-87 refurbishment, there was no overall program plan, cost and schedule baseline, or system to effectively oversee design and production changes. Moreover, no one person was expressly accountable for the W-87, and leadership appeared to move around from one NNSA office to another. As a result, we made a series of recommendations to improve NNSA management, including that NNSA assign a manager who is responsible and accountable for each life extension. In response to our recommendations, NNSA took some actions to improve its management of the Stockpile Life Extension Program including designating a program manager for each life extension.

You asked us to determine the extent to which (1) the program's budget requests for fiscal years 2003 and 2004 were comprehensive and reliable; (2) NNSA has a system for accumulating, tracking, and reporting program costs; and (3) other program management problems exist at NNSA.

²Nuclear Weapons: *Improved Management Needed to Implement Stockpile Stewardship Program Effectively*, [GAO-01-48](#) (Washington, D.C.: Dec. 14, 2000).

Results in Brief

While NNSA's fiscal year 2003 congressional budget request did not provide a clear picture of all activity necessary to complete the Stockpile Life Extension Program, NNSA has begun to take action to produce a more comprehensive and reliable picture of the program for fiscal year 2004 and beyond. With respect to fiscal year 2003, NNSA did not, for example, include activities for high explosives work that is needed to support three life extension efforts in an unclassified budget annex that provided data for the program. NNSA developed its budget by broad function—such as research and development—rather than by individual weapon system or program activity such as the Stockpile Life Extension Program. In addition, NNSA officials expressed concern that dissemination of more detailed program budget information would encourage the Congress to cut the most expensive weapon system or systems. Moreover, the numbers in NNSA's budget request for the program had not been validated—as required by DOE directive. NNSA did not validate its fiscal year 2003 budget because, according to a NNSA official, the agency was implementing a new planning, programming, budgeting, and evaluation process. For fiscal year 2004, a larger portion, but not all life extension-related work, within NNSA's budget request has been attributed to the life extension program, resulting in a more comprehensive request. NNSA officials indicated the agency decided not to implement further budget changes in fiscal year 2004 in order to ensure, for instance, that classification concerns are resolved and contractors have time to modify their accounting systems. NNSA officials also stated that a formal budget validation process would be reintroduced for the fiscal year 2005 budget cycle. Our report recommends that the NNSA Administrator further improve the budgeting associated with the Stockpile Life Extension Program by including this program as a formal and distinct part of NNSA's budget submission.

NNSA does not have a system for accumulating and tracking refurbishment costs that comports with federal accounting standards. Specifically, according to the Statement of Federal Financial Accounting Standards Number 4, "Managerial Cost Accounting," federal agencies should accumulate and track the cost of their activities on a regular basis for management information purposes. Such information is important to the Congress and federal managers as they make decisions about allocating federal resources, authorizing and modifying programs, and evaluating program performance. To date, NNSA has not developed a managerial cost accounting system that aligns with the program and its activities and provides the full cost of the refurbishments. NNSA has several

mechanisms to track various portions of the refurbishment costs, but these mechanisms are used for different purposes, include different types of costs, and cannot be reconciled with one another. This report recommends that the NNSA Administrator take steps to improve cost accounting associated with the Stockpile Life Extension Program.

Finally, despite NNSA's efforts at improvement, other program management problems remain in the areas of planning, organization, and oversight of cost and schedule for the Stockpile Life Extension Program. For instance, NNSA does not yet have an adequate planning process to guide and fully integrate the individual life extensions for each warhead into an overall program. In this regard, NNSA has yet to establish the relative ranking of the Stockpile Life Extension Program among the Office of Defense Programs' priorities or to establish a consistent priority among the individual life extension efforts. Absent a prioritization scheme that had been disseminated and understood throughout the weapons complex, we identified cases where NNSA field contractors unilaterally decided to transfer funds from one refurbishment to another only to be formally questioned by NNSA regarding those decisions. The contractor decisions impacted NNSA's ability to complete refurbishment work on schedule. With respect to organization, despite a December 2002 overall reorganization, NNSA still has not adequately fixed accountability and responsibility for each life extension. In particular, the roles and responsibilities between the individual life extension program and deputy program managers and the site contractor project managers have not yet been clearly defined. Finally, with respect to oversight of cost and schedule, NNSA does not have an adequate process for reporting cost and schedule changes against established baselines. Such a process would help NNSA provide more comprehensive information to the Congress regarding the program's performance goals and accomplishments. Each of the three ongoing refurbishments, we determined, has already experienced some cost growth and schedule changes. For instance, the W-76 refurbishment is slightly behind schedule because of various missed commitments such as deciding whether to reuse or remanufacture certain components. This reuse or remanufacture decision did not occur on schedule, according to the W-76 program manager, primarily because NNSA personnel neglected to perform certain calculations as directed. The W-76 refurbishment will also need an additional \$10.75 million in fiscal year 2004 to purchase certain parts that were previously not authorized or budgeted for. NNSA has recently completed or is in the process of completing various management improvement actions, such as the implementation of an overall planning, programming, budgeting, and evaluation process. While

those actions should help improve management to some degree, they will not address all outstanding stockpile life extension program management issues, such as clarifying the roles and responsibilities of those officials associated with the program. Consequently, this report recommends that the NNSA Administrator improve certain specific management-related activities associated with the Stockpile Life Extension Program, such as clarifying roles and responsibilities and providing the program managers with the authority to properly manage the refurbishments.

We provided NNSA with a draft of this report for review and comment. Overall, NNSA stated that it recognized the need to change the way the Stockpile Life Extension Program was managed and that it generally agreed with the report's recommendations. For instance, NNSA stated that it had independently identified many of the same concerns, and, over the past 12 months, it had made significant progress in implementing plans, programs, and processes to improve program management. NNSA indicated that while full implementation of our management and budgeting recommendations will take several years, NNSA is committed to meeting these objectives. NNSA also provided some technical comments which it believed pointed out factual inaccuracies. We have modified our report, where appropriate, to reflect NNSA's comments.

Background

The nation's nuclear weapons stockpile remains a cornerstone of U.S. national security policy. As a result of changes in arms control, arms reduction, and nonproliferation policies, the President and the Congress in 1993 directed that a science-based Stockpile Stewardship Program be developed to maintain the stockpile without nuclear testing. After the establishment of that program, DOE, in January 1996, created the Stockpile Life Extension Program. The purpose of this program is to develop a standardized approach for planning nuclear weapons refurbishment activities to enable the nuclear weapons complex to extend the operational lives of the weapons in the stockpile well beyond their original design lives.

Within NNSA, the Office of Defense Programs is responsible for the stockpile. This responsibility encompasses many different tasks, including the manufacturing, maintenance, refurbishment, surveillance, and dismantlement of weapons in the stockpile; activities associated with the research, design, development, simulation, modeling, and nonnuclear testing of nuclear weapons; and the planning, assessment, and certification of the weapons' safety and reliability. A national complex of nuclear weapons design laboratories and production facilities supports the Office

of Defense Programs' mission. This complex consists of three national laboratories that design nuclear weapons: Lawrence Livermore National Laboratory in California, Los Alamos National Laboratory in New Mexico, and Sandia National Laboratories in New Mexico and California. The complex also includes the Nevada test site and four production sites: the Pantex plant in Texas, the Y-12 plant in Tennessee, the Kansas City plant in Missouri, and the Savannah River site in South Carolina.

NNSA refurbishes nuclear weapons according to a process called Phase 6.X, which was jointly developed with the Department of Defense. This process consists of the following elements:

- Phase 6.1, concept assessment. This phase consists of studies to provide planning guidance and to develop information so that a decision can be made on whether or not to proceed to a phase 6.2.
- Phase 6.2, feasibility study. This phase consists of developing design options and studying their feasibility.
- Phase 6.2A, design definition and cost study. This phase consists of completing definition of selected design option(s) from phase 6.2 through cost analysis.
- Phase 6.3, development engineering. This phase consists of conducting experiments, tests, and analyses to validate the design option and assess its potential for production.
- Phase 6.4, production engineering. This phase consists of making a strong commitment of resources to the production facilities to prepare for stockpile production.
- Phase 6.5, first production. This phase consists of producing a limited number of refurbished weapons and then disassembling and examining some of them for final qualification of the production process.
- Phase 6.6, full-scale production. This phase consists of ramping up to full-production rates at required levels.

As of May 1, 2003, according to NNSA officials, four nuclear weapons were undergoing phase 6.X refurbishment activities. The W-80 warhead, the B-61 bomb, and the W-76 warhead are all in phase 6.3, development engineering, while the W-87 warhead is in phase 6.6, full-scale production.³

Prior to its budget submission for fiscal year 2001, the Office of Defense Programs divided the operating portion of the Weapons Activities account into two broad program activities—stockpile stewardship and stockpile management. Stockpile stewardship was defined as the set of activities needed to provide the physical and intellectual infrastructure required to meet the scientific and technical requirements of the (overall) Stockpile Stewardship Program. Stockpile management activities included DOE’s historical responsibilities for surveillance, maintenance, refurbishment, and dismantlement of the enduring stockpile. However, each category was dominated by a single large activity known as core stewardship and core management, which made it difficult to determine precisely where funds were being spent. For example, in the Office of Defense Programs’ budget submission for fiscal year 2000, core stewardship accounted for 48 percent of the stockpile stewardship activity’s budget request, while core management accounted for 73 percent of the stockpile management activity’s budget request. The lack of clarity associated with this broad structure caused concern both at DOE and in the Congress.

In February 1999, the Deputy Assistant Secretary for Research, Development, and Simulation, who manages the stockpile stewardship activity, began to develop a new program activity structure to improve the planning process for his program and more closely integrate the program with the needs of the stockpile. The new structure was built around three new program activities—Campaigns, Directed Stockpile Work, and Readiness in Technical Base and Facilities.

- *Campaigns* are technically challenging, multiyear, multifunctional efforts conducted across the Office of Defense Programs’ laboratories, production plants, and the Nevada test site. They are designed to develop and maintain the critical capabilities needed to enable continued certification of the stockpile into the foreseeable future, without underground testing. Campaigns have milestones and specific

³Currently, the U.S. nuclear weapons stockpile consists of nine types of bombs and missile warheads, numbering several thousand devices, which are either stored at strategic military locations or deployed on military aircraft, missiles, or submarines.

end-dates or goals, effectively focusing research and development activities on clearly defined deliverables.

- *Directed Stockpile Work* includes the activities that directly support specific weapons in the stockpile. These activities include the current maintenance and day-to-day care of the stockpile, as well as planned life extensions.
- *Readiness in Technical Base and Facilities* includes the physical infrastructure and operational readiness required to conduct Campaign and Directed Stockpile Work activities at the production plants, laboratories, and the Nevada test site. This includes ensuring that the infrastructure and facilities are operational, safe, secure, compliant, and ready to operate.

Within each of these three activities is a set of more detailed subactivities. For example, within the Campaigns activity are individual campaigns to study, among other things, the primary⁴ in a nuclear weapon or to develop a new capability to produce nuclear weapons pits.⁵ Similarly, the Directed Stockpile Work activity includes subactivities to conduct surveillance or produce components that need regular replacement within nuclear weapons. Finally, the Readiness in Technical Base and Facilities activity includes subactivities to capture the costs for the operation of its facilities. In submitting its new program activity structure to the Office of the Chief Financial Officer for review and approval for use in the budget submission for fiscal year 2001, the Office of Defense Programs believed that the new structure would, among other things, better reflect its current and future missions; focus budget justification on major program thrusts; and improve the linkage between planning, budgeting, and performance evaluation. Budget requests developed since fiscal year 2001 have been presented using the Campaigns, Directed Stockpile Work, and Readiness in Technical Base and Facilities activity structure.

⁴The primary is the fission stage of a nuclear weapon. Detonation of the primary produces the extremely high temperatures and pressures required to produce fusion in the weapon's secondary.

⁵A pit is the initial, subcritical assembly of fissile material in a nuclear weapon. In such an assembly, a fission chain reaction can be sustained only by the addition of neutrons from an independent source.

Within the Office of Defense Programs, two organizations share the responsibility for overall weapons refurbishment management. Those organizations are the Office of the Assistant Deputy Administrator for Research, Development, and Simulation and the Office of the Assistant Deputy Administrator for Military Application and Stockpile Operations. The first office directs funding to the laboratories for research and development, while the second office directs funding for engineering development and production to the laboratories and production sites. According to NNSA's Life Extension Program Management Plan, both organizations also share responsibilities. Both oversee life extension program execution; ensure that the life extension program baseline, if successfully accomplished, will meet customer requirements; and provide life extension program information to higher levels for review. The management plan also stipulates that each life extension shall have one program manager and one deputy program manager, with one being assigned from each of the two aforementioned organizations, and that these two individuals will share program management responsibilities.

NNSA Has Not Provided Congress with a Clear Picture of the Stockpile Life Extension Program Budget or Reliable Budget Figures

While NNSA's fiscal year 2003 budget request did not provide a clear picture of all activity necessary to complete the Stockpile Life Extension Program, NNSA has begun to take action to produce a more comprehensive and reliable picture of the program for fiscal year 2004 and beyond. With respect to fiscal year 2003, NNSA did not develop a comprehensive Stockpile Life Extension Program budget because historically it has developed its budget by broad function—such as research and development—rather than by individual weapon system or program activity such as the Stockpile Life Extension Program. NNSA provided the Congress with supplementary information in its fiscal year 2003 budget request that attempted to capture the budget for the Stockpile Life Extension Program; however, this information was not comprehensive because it did not include the budget for activities necessary to successfully complete the life extension efforts. For example, the budget for high explosives work needed to support three life extension efforts was shown in a different portion of NNSA's budget request. Recently NNSA has decided, after forming a task force to study the issue, to budget and manage by weapon system beginning with its fiscal year 2004 budget request, with this transition officially taking place with congressional approval of the fiscal year 2005 budget request. As a result, NNSA's fiscal year 2004 budget request was more comprehensive because it attributed a larger portion of the Defense Programs' budget to the life extension program. NNSA's fiscal year 2003 and 2004 budget requests were also not reliable because the data

used to develop them had not been formally reviewed—through a process known as validation—as required by DOE directive. Instead, NNSA relied on more informal and less consistent analyses. NNSA officials have stated that a formal budget validation process would be reintroduced for the fiscal year 2005 budget cycle.

NNSA Developed Its Budget Requests by Broad Function Rather Than by Individual Weapon System

NNSA's congressional budget request for fiscal year 2003 did not contain a comprehensive, reliable budget for the Stockpile Life Extension Program or the individual weapon systems undergoing refurbishment. NNSA developed its budget by broad function—such as Campaigns, Directed Stockpile Work, and Readiness in Technical Base and Facilities—rather than by individual weapon system or program activity such as the Stockpile Life Extension Program.

While the Congress has accepted previous NNSA budget submissions as structured, it also has requested detailed information on NNSA's stockpile life extension efforts. Specifically, the fiscal year 2002 Energy and Water Development Appropriations Act conference report directed NNSA to include detailed information by weapon system in the budget justification documents for its fiscal year 2003 and subsequent presidential budget requests to Congress. The conference report also indicated that the budget should clearly show the unique and the fully loaded cost of each weapon activity, including the costs associated with refurbishments, conceptual study, and/or the development of new weapons.

NNSA responded to the congressional requirement by providing an unclassified table in an annex to its fiscal year 2003 budget that contained data on the budget request for the four individual life extensions. This data, however, did not contain budget funding for work outside the Directed Stockpile Work program activity that is required to carry out the life extensions. For example:

- The narrative associated with the High Explosives Manufacturing and Weapons Assembly/Disassembly Readiness Campaign indicates that \$5.4 million, or an 80 percent funding increase, was needed in fiscal year 2003 to support the B-61, W-76, and W-80 refurbishments. The narrative did not provide a breakdown by individual refurbishment. However, NNSA's implementation plan for this campaign indicated that nearly \$50 million would be needed to support the three refurbishments over fiscal years 2002 through 2006.

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- The narrative associated with an expansion project at the Kansas City plant within the Readiness in Technical Base and Facilities program activity indicated that \$2.3 million was needed in fiscal year 2003 and \$27.9 million was needed in the outyears to support the B-61, W-76, and W-87 refurbishments. The narrative also indicated that this expansion was required in order to meet first production unit schedules associated with the refurbishments.

In addition, a significant portion of the funding in the annex table was not assigned to any specific refurbishment but rather was included under a budget line item termed “multiple system.” NNSA officials told us they did not ask field locations to break down the multiple system funding by individual refurbishment because this funding was for “general capability” activities that would continue to be required even if a weapon system were cut. Further, they said that there was currently no good allocation scheme, so a breakdown by weapon system would be inaccurate and, therefore, serve no useful purpose. However, NNSA officials provided us no information indicating that NNSA had ever studied possible allocation schemes or showing that allocation was not feasible. Moreover, according to the DOE’s chief financial officer, NNSA can and should break out the multiple system funding by weapon system. This official indicated that doing so would put the budget in line with presidential guidance and Office of Management and Budget objectives that advocate presenting a budget by product rather than by process. In commenting on our report, NNSA stated that DOE’s chief financial officer had no basis for making any assertions about whether NNSA should break out the multiple system funding by weapon system. However, the chief financial officer has responsibility for ensuring the effective management and financial integrity of DOE’s programs.

More broadly, because NNSA provided the Congress with a table by weapon system in a budget annex and in Nuclear Weapon Acquisition Reports, the agency questioned the need for further identification of the Stockpile Life Extension Program in the fiscal year 2003 budget.⁶ Agency officials, including the Deputy Administrator for Defense Programs, told us

⁶Nuclear Weapon Acquisition Reports are intended to provide a comprehensive look at program progress by providing information on past performance, anticipated changes, and variances from planned cost, schedule, and performance estimates from program inception to completion, regardless of the program’s stage of development. In our report, *NNSA: Nuclear Weapon Reports Need to Be More Detailed and Comprehensive*, [GAO-02-889R](#) (Washington, D.C.: July 3, 2002), we commented on the adequacy of these reports.

that NNSA was reluctant to budget by weapon system because it would like to retain the “flexibility” the current budget structure affords the agency in responding to unanticipated demands and shifting priorities in the Stockpile Stewardship Program. Officials expressed concern that dissemination of more detailed Stockpile Life Extension Program information would encourage the Congress to cut the most expensive weapon system or systems. Furthermore, they asserted that eliminating a weapon system would not save all of the funds associated with that weapon system, because a certain portion would be fixed costs that would have to be transferred to the remaining users.

During the course of our work, however, NNSA has begun to take action to produce a more comprehensive budget for the Stockpile Life Extension Program. Specifically, NNSA decided, after forming a task force to study the issue, to begin budgeting and managing by weapon system in the fiscal year 2004 budget. Starting with that budget, the agency supplied to the Congress a classified annex that allocated more of the costs that were in the multiple system line item to individual weapon systems. In addition, NNSA officials said that more than \$100 million that had been included in the Readiness in Technical Base and Facilities activity was moved to the Directed Stockpile Work activity. However, for fiscal year 2004, no refurbishment-related work in the Campaigns activity has been moved. NNSA officials said that during the fiscal year 2005 budget cycle the agency will review the Readiness Campaigns activity to determine which portion of that activity could also be attributed to weapon systems. NNSA officials indicated the agency decided not to implement all budget changes in fiscal year 2004 in order to ensure that classification concerns are resolved, contractors have time to modify their accounting systems as needed, and NNSA has time to fully understand the costs and characteristics of managing, budgeting, and reporting by weapon system.

NNSA Plans to Resume Activities to Validate Program Budget Estimates

NNSA’s budget requests for fiscal years 2003 and 2004 were not reliable because the data used to develop the budgets have not been formally reviewed—through a process known as validation—as required by DOE directive. Instead, NNSA has relied on a review that has become more informal and less consistent.

Specifically, DOE Order 130.1, on budget formulation, requires budget requests to be based on estimates that have been thoroughly reviewed and deemed reasonable by the cognizant field office and headquarters program organization. The order further requires field offices to conduct validation

reviews and submit documentation and to report any findings and actions to headquarters. A proper validation, as described by DOE's Budget Formulation Handbook, requires the field office to review budget data submissions in detail, sampling 20 percent of the submissions every year such that 100 percent would be evaluated every 5 years.

NNSA officials indicated that no formal validation has been done with respect to refurbishment research and development funding. With respect to refurbishment production funding, NNSA officials described their validation review as a "reasonableness" test regarding the budget's support of a program's needs based on a historical understanding of appropriate labor, materials, and overhead pricing estimates. NNSA officials acknowledged that, in recent years, the agency has not fulfilled the budget validation requirement as specified in DOE Order 130.1, and that the validation review that has been used has become increasingly less formal and less consistent. Prior to this reduction in the quality of the review process, the DOE Albuquerque Operations Office performed formal validation reviews at production plant locations through fiscal year 1996. Since then, the Albuquerque office has relied on a pilot project by which the four contractors directly under its jurisdiction—Sandia National Laboratories, Los Alamos National Laboratory, Kansas City plant, and the Pantex plant—submitted self-assessments for Albuquerque's review. For the fiscal year 2003 and 2004 budgets, however, NNSA officials said headquarters no longer requested field validation as the agency commenced implementation of a new planning, programming, budgeting, and evaluation process.

One NNSA field office, we found, still chose to perform validation reviews of the contractors under its jurisdiction. Specifically, the Oakland office performed a validation review of the Lawrence Livermore National Laboratory. However, other locations, such as the Kansas City plant, the Y-12 plant, and the Savannah River site did not have their budgets reviewed by any NNSA field office. We also were informed by NNSA officials that NNSA headquarters staff did not review the validation reports that were done, as required by DOE Order 130.1, before transmitting the fiscal year 2003 and 2004 budgets to DOE's budget office, which then submitted them to the Office of Management and Budget.

NNSA's director of the Office of Planning, Programming, Budgeting, and Evaluation said that her office plans to introduce a formal validation process for the fiscal year 2005 budget cycle, adding that such a process was not used for the fiscal year 2004 budget cycle because of time

constraints. NNSA documentation regarding the validation process to be used specifies that validation teams will be led by field federal staff elements working with headquarters program managers; the Office of Planning, Programming, Budgeting, and Evaluation staff; and others. However, NNSA documentation is silent on how the validation process will be conducted. Therefore, it is unclear if the validation process will be performed thoroughly and consistently across the weapons complex and if the process will be formally documented, as required by DOE Order 130.1.

NNSA Does Not Have a System for Tracking Refurbishment Costs by Weapon System

Once a budget is established, having reliable information on the cost of federal programs is crucial to the effective management of government operations. Such information is important to the Congress and to federal managers as they make decisions about allocating federal resources, authorizing and modifying programs, and evaluating program performance. The Statement of Federal Financial Accounting Standards (SFFAS) Number 4, “Managerial Cost Accounting Standards,” establishes the framework under which such cost information is gathered. In particular, the standard states that federal agencies should accumulate and report the costs of their activities on a regular basis for management information purposes. The standard sees measuring costs as an integral part of measuring the agency’s performance in terms of efficiency and cost-effectiveness. The standard suggests that such management information can be collected through the agency’s cost accounting system or through specialized approaches—known as cost-finding techniques. Regardless of the approach used, SFFAS Number 4 states that agencies should report the full costs of the outputs they produce. However, under Federal Acquisition Regulations and SFFAS Number 4, NNSA’s contractors do have the flexibility to develop the managerial cost accounting methods that are best suited to their operating environments.

NNSA does not have a system for accumulating and tracking stockpile life extension program costs. Similar to its approach in the budget arena, NNSA currently does not collect cost information for the stockpile life extension program through the agency's accounting system. This is because NNSA has defined its programs and activities, and thus the cost information it collects, at a higher level than the stockpile life extension program. Specifically, DOE collects cost information to support its Defense mission area.⁷ The Defense mission area includes the types of broad activities mentioned earlier, such as Campaigns, Directed Stockpile Work, and Readiness in Technical Base and Facilities. Moreover, DOE's current accounting system does not provide an adequate link between cost and performance measures. Officials in DOE's Office of the Chief Financial Officer recognize these shortcomings and are considering replacing the agency's existing system with a system that can provide managers with cost information that is better aligned with performance measures.

Moreover, NNSA does not accumulate life extension program cost information in the agency's accounting system because NNSA does not require its contractors to collect information on the full cost of each life extension by weapon system. Full costs include the costs directly associated with the production of the item in question—known as direct costs—as well as other costs—known as indirect costs, such as overhead—that are only indirectly associated with production. SFFAS Number 4 states that entities should report the full cost of outputs in its general-purpose financial reports. General-purpose financial reports are reports intended to meet the common needs of diverse users who typically do not have the ability to specify the basis, form, and content of the reports they receive.

Direct costs are captured within NNSA's Directed Stockpile Work activity and include such things as research and development or maintenance. However, NNSA's Directed Stockpile Work activity also includes indirect costs that benefit more than one weapon system or life extension. Examples of indirect costs within Directed Stockpile Work include evaluation and production support costs. Indirect costs are also found within Campaigns and Readiness in Technical Base and Facilities activities. Specifically, as noted earlier, NNSA's budget justification identifies certain Campaign activities, which represent an indirect cost, that support

⁷DOE has defined its goals according to four mission areas, which are Energy, Defense, Science, and Management.

individual life extensions. A portion of both of these sources of indirect costs could be allocated to individual weapon systems; however, NNSA does not currently require such an allocation by its contractors.

It is important to recognize that under SFFAS Number 4, NNSA's contractors do have the flexibility to develop the cost accounting methodologies that are best suited to their operating environments. The contractors involved in the life extension program are structured differently and have different functions. For example, Lawrence Livermore National Laboratory is run by the University of California and conducts mostly research that may or may not produce a tangible product. In contrast, the production plants are run by private corporations which produce parts, as is the case at the Kansas City or Y-12 plants, or assemble the parts into a completed weapon, as is done at the Pantex plant. As a result, even if NNSA required contractors to report the full cost of individual refurbishments, some differences in the data, which reflects the contractor's different organizations and operations, would still exist.

While the agency's accounting system does not accumulate and report costs for the Stockpile Life Extension Program or its individual refurbishments, NNSA has developed several mechanisms to assist the Congress and program managers who oversee the life extension effort. Specifically:

- In previous years, NNSA has requested that its contractors provide supplemental data on actual costs by weapon system. These data have been used to respond to congressional information requests. However, similar to the way NNSA addresses its budget request, NNSA has not required its contractors to allocate the supplemental cost information in the multiple system category to individual refurbishments. In addition, also similar to the way it approached its budget presentation, NNSA has not required its contractors to include the costs for supporting activities, such as Campaigns and Readiness in Technical Base and Facilities in the reports.
- Some life extension program managers require their contractors to provide them with status reports on the individual refurbishments they are overseeing. However, these reports are prepared inconsistently or are incomplete. For example, while the W-76 program manager requires monthly reports, the B-61 program manager requires only quarterly reports. In contrast, the W-80 and W-87 program managers do not require any routine cost reporting. NNSA is trying to develop a

consistent method for its life extension program managers to request cost information; however, NNSA officials have stated that NNSA has to first define what its needs are. Similar to the supplemental cost data described above, these status reports do not contain all of the costs for supporting activities, such as Campaigns and Readiness in Technical Base and Facilities.

- Finally, as part of the production process, NNSA's contractors prepare a report known as the Bill of Materials. The Bill of Materials accumulates the materials, labor, and manufacturing costs of the production of a weapon, starting with an individual part and culminating in the final assembly of a complete weapon. NNSA uses the resulting Master Bill of Materials to record—capitalize—the production costs of each weapon system in its accounting system. However, the costs accumulated by the Bill of Materials include only production costs and do not include costs such as related research and development costs or costs associated with Campaigns and Readiness in Technical Base and Facilities.

Finally, despite the importance of reliable and timely cost information for both the Congress and program managers, similar to the situation we found with the budget, life extension program costs are not independently validated either as a whole or by individual weapon system. Specifically, neither the DOE Inspector General nor DOE's external auditors specifically audit the costs of the life extension program. While both parties have reviewed parts of the life extension program—for example, the Inspector General recently reviewed the adequacy of the design and implementation of the cost and schedule controls over the W-80 refurbishment—their work has not been specifically intended to provide assurance that all life extension program costs are appropriately identified and attributed to the life extension program as a whole or to the individual refurbishments.

Management Problems Remain Despite NNSA Improvements

The management of critical programs and projects has been a long-standing problem for DOE and NNSA's Office of Defense Programs. According to NNSA's fiscal year 2001 report to the Congress on construction project accomplishments, management costs on DOE projects are nearly double those of other organizations, and DOE projects take approximately 3 years longer to accomplish than similar projects performed elsewhere. As a result, NNSA has repeatedly attempted to improve program and project management. For instance, in September 2000, the Office of Defense Programs initiated an improvement campaign to develop solutions to its project management problems and to enact

procedural and structural changes to the Defense Programs' project management system. Later, in August 2002, the Office of Defense Programs established a project/program management reengineering team. As the basis for assembling that team, its charter noted that NNSA does not manage all projects and programs effectively and efficiently. However, despite these NNSA attempts at improvement, management problems associated with the stockpile life extension program persist.

NNSA Does Not Have an Adequate Planning Process to Guide the Individual Life Extensions and the Overall Program

Front-end planning is, in many ways, the most critical phase of an activity and the one that often gets least attention. The front-end planning process defines the activity. The decisions made in this phase constrain and support all the actions downstream and often determine the ultimate success or failure of the activity. NNSA, we found, does not have an adequate planning process to guide the individual life extensions and the overall program. Specifically, NNSA has not (1) established the relative priority of the Stockpile Life Extension Program against other defense program priorities, (2) consistently established the relative priority among the individual refurbishments, (3) developed a formalized list of resource and schedule conflicts between the individual refurbishments in order to systematically resolve those conflicts, and (4) finalized the individual refurbishment project plans on a timely basis.

Priority ranking is an important decision-making tool at DOE. It is the principal means for establishing total organizational funding and for making tradeoffs between organizations. DOE uses such a ranking at the corporate level to make departmental budget decisions. To perform that ranking, DOE formally requires each of its organizational elements to annually submit to the DOE Office of Budget reports that provide a budget year priority ranking and a ranking rationale narrative. In discussing this matter with an NNSA budget official, we found that NNSA had not submitted these priority-ranking reports for fiscal years 2002, 2003, and 2004, and this official was also unable to explain why. NNSA officials, in commenting on our report, indicated that NNSA is not required to follow the DOE requirement regarding priority budget ranking; however, these officials could not provide us with any policy letter supporting their position that NNSA has been officially exempted from this requirement.

Prioritization is also an important part of NNSA's strategic planning process. According to that process, priorities must be identified in an integrated plan developed by each major NNSA office. This integrated plan links sub-office program plans, such as the plan for refurbishing the B-61,

to NNSA's strategic plan. With respect to the Office of Defense Programs, however, we found that this office has not finalized an integrated plan. According to an NNSA official, Defense Programs developed a draft plan in January 2002 but has not completed that plan and has instead devoted itself to working on the sub-office program plans. Absent a finalized integrated plan, it is unclear how sub-office program plans could be developed and properly linked to NNSA's strategic plan.

According to the director of Defense Programs' Office of Planning, Budget, and Integration, prioritizing Defense Programs activities is essential. This is because the priorities of Defense Programs, its contractors, and the Department of Defense, which is Defense Programs' customer for life extension refurbishments, may not necessarily be the same. In this official's view, the issue of setting priorities needs to be addressed. This official indicated that the Office of Defense Programs developed a draft list of activities in August 2001, but did not prioritize those activities. Included among those activities were efforts to continue stockpile surveillance activities and to complete planned refurbishments on schedule. For fiscal years 2003 and 2004, according to this official, Defense Programs published budget-related guidance regarding priorities, but he did not believe the guidance was specific enough. This official added that, for fiscal year 2005, the guidance would have sufficient detail.

While prioritizing work among Office of Defense Programs activities such as stockpile surveillance and refurbishment is important, it is also important to prioritize work within those activities. In the competition for budget funds, the Office of Defense Programs must continually ask which of the three refurbishments undergoing research and development work is a higher priority and should be given funding preference. However, NNSA has not taken a consistent position on prioritizing the life extensions. For instance, in October 2002, NNSA indicated by memorandum that, because of the continuing resolution for fiscal year 2003, the priority order for the three refurbishments would be the W-76, followed by the B-61, followed by the W-80. In November 2002, however, NNSA indicated by memorandum that the three refurbishments had the same priority. In neither memorandum did NNSA identify the criteria or reasons for these two contradictory decisions. According to NNSA officials, no priority criteria have been developed, and each of the three refurbishments is equal in priority.

This lack of a definitive decision on the priority of the three refurbishments has caused confusion. For example, the Los Alamos National Laboratory

decided in early calendar year 2002 to unilaterally transfer funds from the W-76 refurbishment to the B-61 because Los Alamos believed that the B-61 work was more important. As a result of that decision, the W-76 had to slip a research reactor test from fiscal year 2002 to fiscal year 2003. Although this test was not on the critical path for completing the W-76 refurbishment, NNSA had identified the reactor test as a fiscal year 2002 metric for measuring the refurbishment's progress. In February 2002, NNSA questioned Los Alamos regarding its decision. In its March 2002 reply, Los Alamos indicated that it had found a mechanism to fully fund the W-76 refurbishment. However, because the reactor test had been cancelled, Los Alamos indicated that it was no longer possible to complete the test in fiscal year 2002, as planned. Therefore, Los Alamos stated that its goal was to begin this test in the first part of fiscal year 2003. In another case, the Y-12 plant decided to suspend or not initiate four projects at the beginning of fiscal year 2003 in support of the W-76 refurbishment because Y-12 believed that these projects were a lower priority than other work to be conducted. In a November 2002 memorandum, NNSA questioned this decision. NNSA indicated that these projects were integrated with another project, which was needed to ensure a complete special material manufacturing process capability in time to support the W-76 refurbishment. Accordingly, NNSA stated that it was providing \$2.9 million in unallocated funds so that work on the projects could resume as soon as possible to support the refurbishment schedule.

While these examples represent only two documented funding conflicts, according to each of the refurbishment program managers, additional resource and schedule conflicts exist among the three refurbishments. Specifically, the refurbishment program managers agreed that conflicts, or areas of competition, existed on many fronts, including budget resources, facilities, and testing. For example, the three refurbishments compete for certain testing facilities at Los Alamos National Laboratory and at the Sandia National Laboratories, and for the use of certain hardware at the Y-12 plant. Additional conflicts are also present that may affect only two of the three refurbishments. Those identified included such activities as campaign support, research, and development at the Los Alamos National Laboratory, and use of hardware production at the Y-12 plant. The Deputy Assistant Administrator for Military Application and Stockpile Operations confirmed that the areas of competition identified by the individual refurbishment program managers represented a fair portrayal of the conflicts that exist between the refurbishments. He indicated that while no formalized list of resource and schedule conflicts exist, the subject of refurbishment conflicts is routinely discussed at each refurbishment

program review meeting. These meetings are held monthly to discuss one of the refurbishments on a rotating basis.

Finally, fundamental to the success of any project is documented planning in the form of a project execution plan. With regard to the Stockpile Life Extension Program, NNSA has had difficulty preparing project plans on a timely basis. In its report on the lessons learned from the W-87 refurbishment, NNSA noted that one cause of the W-87's problems was that the project plan was prepared too late in the development cycle and was not used as a tool to identify problems and take appropriate actions.⁸ As to the W-76, W-80, and B-61 refurbishments, we found that NNSA had not completed a project plan on time and with sufficient details, as stipulated in NNSA guidance for properly managing the refurbishments.

According to NNSA's June 2001 Life Extension Program Management Plan, a final project plan is to be completed at the end of Phase 6.2A activities (design definition and cost study). The Life Extension Program Management Plan offers numerous guidelines detailing the elements that should be included in the project plan. Those elements include, among others, team structure and the roles of each team and individual members; an integrated program schedule identifying all tasks to be accomplished for the success of the project; life cycle costs; and a documentation of the facility requirements needed to support all portions of the refurbishment. This management plan was issued as guidance, rather than as a formally approved requirements document, pending the resolution of role and responsibility issues within NNSA.

Of the three refurbishments, only the B-61 has completed its project plan on schedule. According to NNSA documentation, the B-61 reached the end of phase 6.2A in October 2002. We confirmed that a project plan had been completed at that time, but the project plan did not include all life cycle costs, such as Campaign costs and Readiness in Technical Base and Facilities costs. In this regard, DOE's project management manual defines life cycle costs as being the sum total of the direct, indirect, recurring, nonrecurring, and other related costs incurred or estimated to be incurred in the design, development, production, operation, maintenance, support, and final disposition of a project.

⁸*Preliminary Lessons Learned Report for the W-87 Life Extension Program*, Sept. 23, 2001.

Conversely, an assessment of the W-76 refurbishment indicates that the project plan for that refurbishment is 3 years late and also does not include all life cycle costs. According to NNSA documentation, the W-76 reached the end of phase 6.2A in March 2000. As of July 2003, a final project plan had not yet been completed. The W-76 project manager told us that he has been using a working draft of a project plan dated August 2001. He indicated that he did not finalize the project plan because the Life Extension Program Management Plan published in June 2001 had yet to be issued as a formal requirement. With the reissuance of the management plan as a requirement in January 2003, an NNSA official said that a finalized project plan should be completed by the end of fiscal year 2003.

Likewise, an assessment of the W-80 refurbishment indicates that the project plan for that refurbishment is more than 2 years late and also does not include all life cycle costs. According to NNSA documentation, the W-80 reached the end of phase 6.2A in October 2000. As of July 2003, a complete project plan had not been prepared. According to the W-80 program manager, the refurbishment does not yet have an integrated project schedule as described in the Life Extension Program Management Plan. The W-80 program manager said that a finalized project plan with this integrated schedule, which shows all tasks associated with the refurbishment as well as all linkages, should be completed by mid-to-late summer 2003. The W-80 program manager added that this integrated schedule was not completed earlier because of personnel changes on this refurbishment.

NNSA Does Not Yet Have an Adequate Management Structure that Fixes Roles, Responsibilities, and Authority for Each Life Extension

DOE's portfolio of projects demands a sophisticated and adaptive management structure that can manage project risks systematically; control cost, schedule, and scope baselines; develop personnel and other resources; and transfer new technologies and practices efficiently from one project to another, even across program lines. With respect to the Stockpile Life Extension Program, NNSA does not have an adequate management structure which ensures rigor and discipline, fixes roles, responsibilities, and authority for each life extension, or develops key personnel. Specifically, NNSA has not (1) defined the life extensions as projects and managed them accordingly, (2) clearly defined the roles and responsibilities of those officials associated with the Stockpile Life Extension Program, (3) provided program managers with sufficient authority to carry out the refurbishments, or (4) given program and deputy program managers proper project/program management training.

DOE projects commonly overrun their budgets and schedules, leading to pressures for cutbacks that have resulted in facilities that do not function as intended, projects that are abandoned before they are completed, or facilities that have been delayed so long that, upon completion, they no longer serve any purpose.⁹ The fundamental deficiency for these problems has been a DOE organization and culture that has failed to embrace the principles of good project management. The same can be said for NNSA's view of the individual life extension refurbishments. Specifically, NNSA has not established that the individual refurbishments are projects and managed them accordingly.

According to the DOE directive, a project is a unique effort that, among other things, supports a program mission and has defined start and end points. Examples of projects given in the DOE directive include planning and execution of construction, renovation, and modification; environmental restoration; decontamination and decommissioning efforts; information technology; and large capital equipment or technology development activities. To the extent that an effort is a project, the DOE directive dictates that the project must follow a structured acquisition process that employs a cascaded set of requirements, direction, guidance, and practices. This information helps ensure that the project is completed on schedule, within budget, and is fully capable of meeting mission performance and environmental, safety, and health standards.

According to the Deputy Assistant Administrator for Military Application and Stockpile Operations, the individual life extension refurbishments are projects but have not been officially declared so. This official indicated that the primary reason for the lack of such a declaration is an organizational culture, including those working at NNSA laboratories, which often does not grasp the benefits of good project management. This official also said that the organization is moving in the direction of embracing project management but is doing so at an extremely slow pace.

If NNSA declared the individual life extension refurbishments to be projects, many useful project management tools would become available to the NNSA program managers who are overseeing the refurbishments. Those tools include, for example, conducting an independent cost estimate, which is a "bottom-up" documented, independent cost estimate that has

⁹*Improving Project Management in the Department of Energy*, National Research Council, 1999.

the express purpose of serving as an analytical tool to validate, cross-check, or analyze cost estimates developed by the sponsors of the project. Another tool is the use of earned value reporting, which is a method for measuring project performance. Earned value compares the amount of work that was planned at a particular cost with what was actually accomplished within that cost to determine if the project will be completed within cost and schedule estimates. A further tool is the reporting of project status on all projects costing over \$20 million to senior DOE and NNSA management using DOE's Project Analysis Reporting System. NNSA refurbishment program managers with whom we spoke indicated that management of the refurbishments would be improved if tools such as independent cost estimates and earned value reporting were used.

With respect to roles and responsibilities, clearly defining a project's organizational structure up front is critical to the project's success. In a traditional project management environment, the project manager is the key player in getting the project completed successfully. But other members of the organization also play important roles, and those roles must be clearly understood to avoid redundancy, miscommunication, and disharmony. With respect to the Stockpile Life Extension Program, NNSA has yet to clearly define the roles and responsibilities of all parties associated with the program.

NNSA's Life Extension Program Management Plan dated June 2001 was the controlling document for defining refurbishment roles and responsibilities from its issuance through calendar year 2002. Our review of that plan, however, found a lack of clarity regarding who should be doing what. For instance, the plan is unclear on which NNSA office is responsible for each phase of the 6.X process. Illustrating that point, refurbishment program managers with whom we spoke generally said there is confusion as to which NNSA office—either the Office of Research, Development, and Simulation or the Office of Military Application and Stockpile Operations—has the primary responsibility when the refurbishment moves to phase 6.3 (development engineering) of the 6.X process. In addition, according to the plan, the program manager and deputy program manager have identical responsibilities. The plan states that the program manager and deputy program manager shall discuss significant aspects of the refurbishment with each other and should reach consensus concerning important aspects of the scope, schedule, and cost. The plan further states that absent consensus on an issue, the program manager may decide; however, any unresolved conflicts between the two can be addressed to senior management for resolution. Further, the plan is silent on the roles and

responsibilities of the NNSA program and deputy program managers versus the project manager at a laboratory or at a production plant site. What actions the laboratory or plant project managers can take on their own, without NNSA review and concurrence, are not specified in the plan. Instead, the plan simply states that laboratory and plant project managers provide overall management of life extension refurbishment activities at their facilities.

In January 2003, NNSA reissued the Life Extension Program Management plan after making only minor changes to the document. The reissued management plan indicates that the program manager's role will transition from the NNSA Office of Research, Development, and Simulation to the NNSA Office of Military Application and Stockpile Operations during phase 6.3. However, the reissued plan does not specify when, during phase 6.3, this transition will occur. In addition, the reissued plan does not further clarify the roles and responsibilities between the program and deputy program managers and the project manager at a laboratory or at a production plant site.

In addition to clear roles and responsibilities, project managers must have the authority to see the project through. Regarding project management, authority is defined as the power given to a person in an organization to use resources to reach an objective and to exercise discipline. NNSA's lessons learned report on the W-87 refurbishment noted that there was an air of confusion in resolving issues at the Kansas City plant because project leaders were not formally assigned and provided with the tools (authority, visibility, and ownership) necessary to properly manage the effort.¹⁰ Our report on the W-87 refurbishment prepared in calendar year 2000 found similar problems regarding the lack of authority.¹¹ With respect to the Stockpile Life Extension Program, NNSA has still not yet given the program managers the authority to properly manage the refurbishments.

¹⁰*Preliminary Lessons Learned Report for the W-87 Life Extension Program*, Sept. 23, 2001.

¹¹*Nuclear Weapons: Improved Management Needed to Implement Stockpile Stewardship Program Effectively*, [GAO-01-48](#) (Washington, D.C.: Dec. 14, 2000).

Five of the six program or deputy program managers associated with the B-61, W-76, and W-80 refurbishments believed they had not been given the authority to properly carry out the refurbishments.¹² For instance, one program manager said he has neither the control nor the authority associated with his refurbishment. He added that the program managers ought to be given the authority so that the laboratories report directly to them. As the situation currently stands, the laboratories will go over the heads of the program manager to senior NNSA management to get things done the laboratories' way. According to a deputy program manager on another refurbishment, the program managers do not have enough authority and should have control of the refurbishments' budgets. He elaborated by explaining how one laboratory unilaterally decided to take funds away from one refurbishment and give it to another without consulting with any of the program managers. In this deputy program manager's view, if funds need to be transferred from one refurbishment to another, then the laboratories should be required to get the concurrence of NNSA management. A program manager on another refurbishment stated that he does not have sufficient authority because he lacks control of the budget. He indicated that funds for his refurbishment are allocated to the various laboratory and plant sites, but he is not included in the review and concurrence loop if the sites want to transfer funds from one activity to another.

The Assistant Deputy Administrator for Military Application and Stockpile Operations said he recognized the program manager's concerns and has advocated giving the program managers greater authority. He also indicated that greater authority might eventually be granted. However, he explained that at the moment, the Office of Defense Programs is focused on a recently completed NNSA reorganization. After that matter is sufficiently addressed, greater authority for the program managers may result.

Turning to the issue of training, competent project management professionals are essential to successful projects. Other federal agencies and the private sector realized long ago that project management is a professional discipline that must be learned and practiced. To ensure that projects are well planned and properly executed, DOE created in 1995 a competency standard for project management personnel. According to

¹²The sixth individual, a deputy program manager on one of the refurbishments, was not available to us for discussions due to an illness.

this standard, it is applicable to all DOE project management personnel who are required to plan and execute projects in accordance with departmental directives regarding project management. The standard identifies four categories of competencies that all project management personnel must attain and states that attainment must be documented. The categories are (1) general technical, such as a knowledge of mechanical, electrical, and civil engineering theories, principles, and techniques; (2) regulatory, such as a knowledge of applicable DOE orders used to implement the department's project management system; (3) administrative, such as a knowledge of the project reporting and assessment system as outlined in DOE orders; and (4) management, assessment, and oversight, such as a knowledge of DOE's project management system management roles, responsibilities, authorities, and organizational options.

Of the six program and deputy program managers assigned to the W-76, B-61, and W-80 refurbishments, NNSA records indicate that only one of the six (the program manager for the W-76) has achieved 100 percent attainment of the aforementioned standards. Regarding the other five, NNSA records indicate that the deputy program manager for the B-61 has achieved 30 percent attainment of the required competencies contained in the standard, while the remaining four are not enrolled under the qualification standards program. According to one of the three program managers with whom we spoke, the problems with the W-87 refurbishment were caused, in part, because the assigned program manager was not qualified to perform all required tasks. NNSA records confirm that that particular W-87 program manager was also not enrolled in the project management qualification program.

Whereas NNSA program managers are required to meet qualifications standards to discharge their assigned responsibilities, contractor project management personnel we contacted are not required to meet any project management standards. According to W-76, B-61, and W-80 refurbishment project managers at the Sandia National Laboratories, Lawrence Livermore National Laboratory, and Los Alamos National Laboratory, their respective laboratories have no requirements that must be met before a person becomes a project manager, and none of the managers had attained project management certification through their previous work assignments and experiences. NNSA officials also acknowledge that neither DOE nor NNSA orders require contractor project management personnel to be properly trained and certified.

NNSA Does Not Have an Adequate Process for Overseeing Life Extension Program Costs and Schedules

Effective oversight of project performance is dependent on the systematic and realistic reporting of project performance data. Senior management need such data to be able to detect potentially adverse trends in project progress and to decide when intervention is necessary. With respect to the Stockpile Life Extension Program, NNSA does not have an adequate process for reporting life extension changes and progress, despite the fact that cost growth and schedule slippage are occurring.

In July 2002, the Office of Defense Programs issued program review guidance to enable advance planning, provide consistency, set clearer expectations, and establish a baseline process on which to improve life extension, program reviews. Various review meeting formats were articulated including a full program review of each refurbishment to be conducted monthly on a rotating basis. The goals and objectives of the full program review were to inform management of project status, convince management that the refurbishment is well managed, gain management's assistance in resolving issues that require its involvement, and identify management decision points and obtain authority to execute risk mitigation plans.

Our review of the most recent program review reports prepared on the individual refurbishments showed that they contained limited information regarding cost growth and schedule changes against established baselines. These reports, which are prepared for senior NNSA management, show whether the respective refurbishment is on track to spend all fiscal year funding, but not whether the actual work completed has cost more or less than planned. For example:

- According to W-76 program review reports presented in November 2002 and February 2003, the refurbishment was on track to spend all funding allocated for fiscal year 2003. In addition, the refurbishment was slightly behind schedule but manageable and within budget. On the other hand, the presentations gave no specifics on how much the refurbishment is behind schedule or how well the refurbishment was progressing against a life cycle cost baseline. Specifically, costs associated with certain procurements, Campaign costs, Readiness in Technical Base and Facilities costs, construction costs, and transportation costs which make up the life cycle costs of the refurbishment were not included. The presentations also showed that the refurbishment had not met at least two commitments during fiscal year 2002.

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- According to the W-80 program review report presented in December 2002, the refurbishment was on track to spend all funding allocated for fiscal year 2003. In addition, the refurbishment was within cost and within scope, but behind schedule. On the other hand, the report gave no specifics on how much the refurbishment was behind schedule or how well the refurbishment was progressing against a life cycle cost baseline. The presentation further mentioned that the refurbishment had high risks because, for instance, the Air Force was currently not funding certain work that must be performed in order to meet the established first production unit date of February 2006.
 - As opposed to the above reports, the B-61 program review reports presented in January and March 2003 made no summary statements regarding the refurbishment's cost and schedule status against established baselines. The presentations also indicated that the refurbishment is on schedule to spend all funding allocated for fiscal year 2003. On the other hand, the presentations showed that the refurbishment has already not met several commitments for fiscal year 2003, suggesting that the refurbishment may be behind schedule.

Absent the periodic reporting of specific cost growth and schedule information to senior NNSA management, we interviewed cognizant NNSA officials to document any cost growth and schedule changes associated with the individual refurbishments. These officials recognized that certain cost growth and schedule changes had occurred for each of the refurbishments. These officials added that cost growth and schedule changes are routinely discussed during meetings on the refurbishments.

According to the W-76 program manager, this refurbishment is slightly behind schedule. In particular, the W-76 did not conduct certain activities on schedule, such as deciding whether to reuse or remanufacture certain components, conduct a certain reactor test at Los Alamos National Laboratory, and construct certain facilities at the Y-12 plant. The reasons why these activities were late varied. For instance, the decision to reuse or remanufacture certain components did not occur on schedule, according to the W-76 program manager, primarily because the NNSA person assigned to do the necessary calculations neglected to perform that task. Conversely, the reactor test at the Los Alamos National Laboratory did not occur on schedule because the laboratory unilaterally transferred funds from the W-76 refurbishment to the B-61. As to cost growth, the W-76 will need about \$10.75 million in additional funding in fiscal year 2004. The funding

is necessary to purchase certain commercial off-the-shelf parts that were previously not authorized or budgeted for.

According to NNSA field and Sandia National Laboratory officials, it is unlikely that the W-80 will meet its scheduled first production unit delivery date. Echoing those sentiments, according to the NNSA program manager, the W-80 was scheduled to enter phase 6.4 (production engineering) on October 1, 2002. Now, however, it is hoped that phase 6.4 will commence in 2003. The NNSA program manager indicated that the W-80 has been impacted by a lack of funding for the refurbishment from the Air Force. This lack of funding, the NNSA program manager said, has occurred because of a disconnect in planning between the 6.X process and the Department of Defense budget cycle. The Air Force had made no plans to allocate money for the W-80 in either its fiscal year 2001 or 2002 budgets. Therefore, several important joint NNSA and Air Force documents have not been completed. Certain ground and flight tests also lack funding and have been delayed. In addition, the W-80 will need an additional \$8 million to \$9 million in fiscal year 2003 to buy certain commercial off-the-shelf parts that had been planned but not budgeted for. According to the Air Force's Lead Program Officer on the W-80, the Air Force, because of an oversight, had no money for the W-80 in its fiscal years 2001 and 2002 budgets. As a result, he anticipated that the first production unit delivery date will need to be slipped. He also indicated that he was working on a lessons learned report due in early 2003 to document the situation with the W-80 and help ensure that a similar funding problem does not occur with future refurbishments. This Air Force official added that in December 2002 the Air Force finally received the funding necessary to support the W-80 refurbishment. According to the NNSA director of the nuclear weapons stockpile, the W-80 will need to slip its first production unit date from February 2006 to April 2007. As a result, NNSA was rebaselining the W-80 refurbishment. As of July 2003, cost data submitted to NNSA headquarters from contractor laboratory and production site locations indicate that the cost to refurbish the W-80 may increase by about \$288 million. NNSA officials were in the process of determining whether this cost increase was due to schedule slippage or other factors, such as the sites underestimating costs in the past.

Finally, certain schedule slippage has already occurred for the B-61. According to NNSA's June 2001 Life Extension Program Management Plan, the original first production unit delivery date was September 2004. Now, according to the B-61 program manager, the new delivery date is June 2006. The program manager indicated that this change was made because NNSA

determined that the September 2004 date was not attainable. As it is, the B-61 program manager said, the June 2006 date represents an acceleration of the phase 6.X process where activities within phases 6.3 (design definition and cost study) and 6.4 (development engineering) will be conducted concurrently. Because of that, certain risks are involved. For instance, some design development will not be fully completed before production must be initiated to keep the refurbishment on schedule. The B-61 program manager indicated that the commencement date for phase 6.3 has already changed from August 2002 to December 2002 because of the Air Force's lack of timely action in reviewing certain documentation. As to cost changes, a decision needs to be made regarding the production of a particular material. Two NNSA locations, which differ in cost, are being considered. If the location with the higher cost is selected, then an additional \$10 million will be needed in fiscal year 2004 and beyond.

To gauge the progress of the refurbishments within the Stockpile Life Extension Program, NNSA, like all federal agencies, uses performance measures. Performance measures, which are required by the Government Performance and Results Act of 1993, are helpful to senior agency management, the Congress, and the public. Performance measures inform senior agency management as to whether progress is being made toward accomplishing agency goals and objectives. They are also used by the Congress to allocate resources and determine appropriation levels. Performance measures are further used by American taxpayers as a means for deciding whether their tax funds are being well spent. Unfortunately, NNSA has not developed performance measures with sufficient specificity to determine the progress of the three refurbishments that we reviewed. As mentioned earlier, the agency's current accounting system does not provide an adequate link between cost and performance measures.

NNSA identifies performance measures for the W-80, B-61, and W-76 in three separate and distinct documents.¹³ One document is the narrative associated with NNSA's fiscal year 2004 budget request for the Directed Stockpile Work account. Another is the combined program and implementation plans for the stockpile maintenance program for fiscal years 2002 through 2008. A third is the Future Years Nuclear Security Plan. Performance measures used in these documents do not identify variance from cost baselines as a basis for evaluating performance.

¹³NNSA also prepares a Selected Acquisition Report on an annual basis on each of the refurbishments, but these reports do not contain performance measures.

Performance measures identified in NNSA's fiscal year 2004 budget request are general in nature and provide no details regarding cost performance. According to that budget request, for instance, a performance measure listed for the B-61, W-76, and W-80 is to complete 100 percent of the major milestones scheduled for fiscal year 2004 to support the refurbishments' first production unit date. None of the performance measures listed in the budget request mention adherence to cost baselines.

Performance measures identified in the combined program and implementation plans for the Directed Stockpile Work maintenance program dated September 3, 2002, are equally minimal, vague, and nonspecific regarding refurbishment work. These plans identify performance measures at three levels—level 1, the Defense Program level, which is the highest level of actions/milestones/deliverables; level 2, which is the supporting level of actions/milestones/deliverables on the path toward achieving level 1 measures; and level 3, which is the site level of actions/milestones/deliverables on the site path toward achieving level 2 measures. According to these plans, there are no level 1 performance measures associated with the three refurbishments. For levels 2 and 3, the plans specify that the three refurbishments should meet all deliverables as identified in other NNSA documents. These plans, we noted, do not discuss adherence to cost baselines as a deliverable.

Performance measures identified in the Future Years Nuclear Security Plan are also vague and nonspecific. This plan describes performance targets that NNSA hopes to achieve in fiscal years 2003 through 2007, but the plan does not associate funding levels with those targets. Some of the performance targets apply to the Stockpile Life Extension Program in general or to particular refurbishments. Regarding the latter, for example, in fiscal year 2003, NNSA intends to commence production engineering work (phase 6.4) for the B-61, W-76, and W-80 refurbishments, and to eliminate W-76, W-80, and W-87 surveillance backlogs. The plan, however, does not associate funding estimates with these performance targets.

According to the Assistant Deputy Administrator for Military Application and Stockpile Operations, the refurbishment performance measures contained in the three aforementioned documents are admittedly not very good. He indicated that the Office of Defense Programs is moving toward linking key performance measures to appropriate NNSA goals, strategies, and strategic indicators. The Assistant Deputy Administrator stated that he hoped that the performance measures for fiscal year 2005 would provide a

better basis for evaluating the refurbishments' progress in adhering to cost baselines.

NNSA Has Various Actions Underway to Fix Its Management Problems

While NNSA management problems are many and long-standing, so too have been NNSA attempts to effect improvement. NNSA has repeatedly studied and analyzed ways to ensure that mistakes made in the past regarding the safety of nuclear weapons, the security of nuclear facilities, and the protection of nuclear secrets are not repeated in the future. Accordingly, NNSA has various actions underway to fix its management problems.

Foremost of those actions has been the December 2002 completion of a reorganizational transformation campaign. In announcing this reorganization, the NNSA administrator said the reorganization follows the principles outlined in the President's Management Agenda, which strives to improve government through performance and results. The new reorganization will reportedly streamline NNSA by eliminating one layer of management at the field office level. It will also improve organizational discipline and efficiency by requiring that each element of the NNSA workforce will become ISO 9001 certified by December 31, 2004. ISO 9001 is a quality management standard that has been recognized around the world. The standard applies to all aspects necessary to create a quality work environment, including establishing a quality system, providing quality personnel, and monitoring and measuring quality.

In concert with NNSA's overall reorganization has been the creation of a program integration office in August 2002. This new office will be working to create better coordination and cooperation between NNSA Office of Defense Program elements. The new office is composed of three divisions: one that will be performing strategic planning and studies; one that will be looking at the strategic infrastructure; and one that will be doing planning, budgeting, and integration work. The implementation plan for this new office, as of July 2003, had not yet been approved and disseminated because of a major personnel downsizing that is underway.

Nonetheless, this new office has already embarked on various initiatives. One initiative is to decide on a cost baseline for the Stockpile Life Extension Program. According to the Director of Defense Programs' Office of Planning, Budgeting and Integration, a completion date for this work has not yet been set. A second initiative is to develop an integrated master schedule for the Stockpile Life Extension Program that will help identify

and resolve schedule and resource conflicts. The director indicated that such a schedule should be available at the end of calendar year 2003. A third initiative is to develop consistent criteria for reporting schedule activities and critical milestones. The director indicated that without such criteria there is no assurance that consistent information is being reported on the individual refurbishments. The director indicated that these criteria would be developed during the summer of 2003.

Of no less importance to the organizational changes, NNSA has implemented an overall planning, programming, budgeting, and evaluation process. The goal of this process is to obtain and provide the best mix of resources needed to meet national nuclear security objectives within fiscal restraints. Through planning, the process will examine alternative strategies, analyze changing conditions and trends, identify risk scenarios, assess plausible future states, define strategic requirements, and gain an understanding of the long-term implications of current choices. Through programming, the process will evaluate competing priorities and mission needs, analyze alternatives and trade-offs, and allocate the resources needed to execute the strategies. Through budgeting, the process will convert program decisions on dollars into multiyear budgets that further refine the cost of the approved 5-year program. Through evaluation, the process will apply resources to achieve program objectives and adjust requirements, based on feedback. This process was partially rolled out for the fiscal year 2004 budget cycle, with full implementation scheduled for fiscal year 2005.

A separate effort has been the establishment of a project/program management reengineering team in August 2002. According to the team's charter, NNSA does not manage all its programs effectively and efficiently. Therefore, the mission of this team was to develop a program management system, including policies, guides, procedures, roles, responsibilities, and definitions that would enable NNSA to achieve excellence in program management. The observations of the team, as of September 2002, were that the state of health of the NNSA program management processes is very poor, and this condition significantly affects the ability of NNSA to achieve its missions effectively and efficiently. In the words of the team, many essential elements of an effective program management system do not exist. Examples given included no documented roles and responsibilities and no documented overarching process for program management. According to the team leader, an implementation plan to improve NNSA program management was submitted to the administrator for approval in October 2002. As of July 2003, the implementation plan had not been

approved. According to the Director of Defense Programs' Office of Program Integration, no action has been taken on this implementation plan while NNSA has been addressing its recent reorganization. It is now hoped, according to this official, that project/program improvement actions can be identified and implemented by the start of fiscal year 2004.

Conclusions

Extending the life of the weapons in our nation's nuclear stockpile represents one of the major challenges facing NNSA. It will demand a budget of hundreds of millions of dollars annually for the next decade. Considerable coordination between the design laboratories and the production facilities will be necessary as the four life extensions compete for scarce resources. Where conflicts occur, trade-offs will be required—trade-offs that must be made by federal managers, contractors, and, ultimately, the Congress. All of these things cannot occur without sound budgeting. Likewise, all parties involved in the oversight of the Stockpile Life Extension Program must be able to determine the true cost to complete the life extensions throughout the refurbishment process, identify cost overruns as they develop, and decide when intervention in those cost overruns is necessary. This cannot occur without sound cost accounting. Finally, the life extensions must be properly managed because the consequences of less than proper management are too great. Those consequences, as seen on the W-87 life extension, include potential cost overruns in the hundreds of millions of dollars and refurbishment completion occurring beyond the dates required for national security purposes. To avoid these consequences, the life extensions must have adequate planning; a clear leadership structure which fixes roles, responsibilities, and authority for each life extension; and an adequate oversight process. While NNSA has begun to put in place some improved budgeting and management processes, additional action is necessary if it is to achieve the goal of a safe and reliable stockpile that is refurbished on cost and on schedule.

Recommendations for Executive Action

To improve the budgeting associated with the Stockpile Life Extension Program, we recommend that the Secretary of Energy direct the NNSA Administrator to

- include NNSA's stockpile life extension effort as a formal and distinct program in its budget submission and present, as part of its budget request, a clear picture of the full costs associated with this program and

its individual refurbishments by including the refurbishment-related costs from Campaigns, Readiness in Technical Base and Facilities, and multiple system work, and

- validate the budget request in accordance with DOE directives.

To improve cost accounting associated with the Stockpile Life Extension Program, we recommend that the Secretary of Energy direct the NNSA Administrator to

- establish a managerial cost accounting process that accumulates, tracks, and reports the full costs associated with each individual refurbishment, including the refurbishment-related costs from Campaigns, Readiness in Technical Base and Facilities, and multiple system work.

To improve the management of the Stockpile Life Extension Program, we recommend that the Secretary of Energy direct the NNSA Administrator to:

With respect to planning

- finalize the Office of Defense Programs' integrated program plan and, within that plan, rank the Stockpile Life Extension Program against all other defense program priorities, establish the relative priority among the individual life extension refurbishments, and disseminate the ranking across the nuclear weapons complex so that those within that complex know the priority of the refurbishment work;
- develop a formalized process for identifying resource and schedule conflicts between the individual life extension efforts and resolve those conflicts in a timely and systematic manner; and
- finalize individual refurbishment project plans.

With respect to management structure

- establish the individual refurbishments as projects and manage them according to DOE project management requirements;
- clearly define the roles and responsibilities of all parties associated with the Stockpile Life Extension Program;

-
- provide the life extension program managers with the authority and visibility within the NNSA organization to properly manage the refurbishments; and
 - require that life extension program managers and others involved in management activities receive proper project/program management training and qualification.

With respect to oversight of cost and schedule

- institute a formal process for periodically tracking and reporting individual refurbishment cost, schedule, and scope changes against established baselines, and
- develop performance measures with sufficient specificity to determine program progress.

Agency Comments

We provided NNSA with a draft of this report for review and comment. Overall, NNSA stated that it recognized the need to change the way the Stockpile Life Extension Program was managed and that it generally agreed with the report's recommendations. For instance, NNSA stated that it had independently identified many of the same concerns, and, over the past 12 months, had made significant progress in implementing plans, programs, and processes to improve program management. NNSA indicated that full implementation of our management and budgeting recommendations will take several years; however, NNSA is committed to meeting these objectives. NNSA also provided some technical comments which it believed pointed out factual inaccuracies. We have modified our report, where appropriate, to reflect NNSA's comments. NNSA's comments on our draft report are presented in appendix I.

Scope and Methodology

We performed our work at DOE's and NNSA's headquarters and Sandia National Laboratories, Los Alamos National Laboratory, and the Kansas City plant from July 2002 through July 2003 in accordance with generally accepted government auditing standards. To determine the extent to which the Stockpile Life Extension Program's budget requests for fiscal years 2003 and 2004 were comprehensive and reliable, we reviewed those requests as well as NNSA supporting documentation, such as guidance issued to develop those requests, information related to NNSA's planning,

programming, budgeting, and evaluation process, and budget validation reports. We also discussed those budget requests with DOE and NNSA budget officials and an official with the Office of Management and Budget. To determine the extent to which NNSA has a system for accumulating, tracking, and reporting program costs, we identified how cost data is tracked in DOE's information systems and in selected contractors' systems by interviewing key DOE, NNSA, and contractor officials responsible for the overall Stockpile Life Extension Program and the individual refurbishments and by reviewing pertinent documents. We also identified how DOE and NNSA ensure the quality and comparability of cost and performance data received from contractors by interviewing DOE and NNSA officials, DOE Office of Inspector General officials, and selected contractors' internal auditors, and by reviewing pertinent documents including previously issued GAO and DOE Office of Inspector General reports. To determine the extent to which other management problems related to the Stockpile Life Extension Program exist at NNSA, we reviewed pertinent NNSA documentation, such as NNSA's Strategic Plan, the Office of Defense Programs' draft integrated plan, the Life Extension Program Management Plan, and project plans and variance reports required by the Life Extension Program Management Plan for the B-61, W-76, and W-80 refurbishments. We also interviewed key DOE, NNSA, and contractor officials involved with the Stockpile Life Extension Program, and, in particular, the program and deputy program managers of the B-61, W-76, and W-80 refurbishments. Finally, we attended the NNSA quarterly program review meetings on each of the refurbishments.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 10 days after the date of this letter. At that time, we will send copies of the report to the Secretary of Energy, the Administrator of NNSA, the Director of the Office of Management and Budget, and appropriate congressional committees. We will make copies available to others on request. In addition, the report will also be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staff have any questions about this report, please call me at (202) 512-3841. Major contributors to this report are listed in appendix II.

Robin M. Nazzaro

Robin M. Nazzaro
Director, Natural Resources and
Environment

List of Congressional Requesters

The Honorable David L. Hobson
Chairman, Energy and Water Development Subcommittee
House Committee on Appropriations

The Honorable Peter J. Visclosky
Ranking Minority Member, Energy and Water Development Subcommittee
House Committee on Appropriations

The Honorable Terry Everett
Chairman, Subcommittee on Strategic Forces
House Committee on Armed Services

The Honorable Silvestre Reyes
Ranking Minority Member, Subcommittee on Strategic Forces
House Committee on Armed Services

Comments from the National Nuclear Security Administration



Department of Energy
National Nuclear Security Administration
Washington, DC 20585



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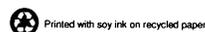
Ms. Robin M. Nazzaro
Director, Natural Resources
and Environment
U.S. General Accounting Office
Washington, D.C. 20548

Dear Ms. Nazzaro:

The General Accounting Office's (GAO) draft report GAO-02-583, "NUCLEAR WEAPONS: Opportunities Exist to Improve the Budgeting, Cost Accounting, and Management Associated with the Stockpile Life Extension Program," has been reviewed by the National Nuclear Security Administration (NNSA). We understand that the Armed Services and Appropriations Committees of the House asked the GAO to determine (1) how well NNSA's budget identifies Life Extension Program costs; and, (2) the mechanisms in place to both manage and accumulate costs for the Life Extension Program.

NNSA has recognized the need to change the way the Life Extension Program is managed, and we generally agree with the report's recommendations. NNSA had independently identified many of the same concerns, and over the past 12 months the agency has made significant progress in implementing plans, programs and processes to improve program management. The improvements suggested by the GAO in management of the weapon refurbishment activities are already underway; for example, NNSA is re-engineering in Headquarters and the field elements, by formalizing the roles and responsibilities and training of all NNSA program managers, and by implementation of PPBE as the core operating concept for NNSA. The PPBE requirements for Planning, Programming, Budgeting and Evaluation encompass essentially all of the GAO's recommendations.

The improvements in budgeting will begin in FY 2005 by: restructuring the Directed Stockpile Work activities to a system-by-system orientation; re-evaluating the content of the Campaigns to realign direct weapons work if necessary; and by implementing a budget and reporting (B&R) structure for accounting based on individual weapon systems. Also, Life cycle costs are now formalized through Selected Acquisition Reports, modeled after the DOD Selected Acquisition Report, subject to change control, annual review, and validation. Full implementation of GAO's management and budgeting recommendations will take several years but NNSA is committed to meeting these objectives.



Appendix I
Comments from the National Nuclear
Security Administration

2

I have enclosed technical comments to this letter which point out some factual inaccuracies, erroneous conclusions, and provide additional general comments. Should you have any questions, please contact Richard Speidel, Director, Policy and Internal Controls Management, at 202-586-5009.

Sincerely,



Michael C. Kane
Associate Administrator
for Management and Administration

Enclosure

GAO Contact and Staff Acknowledgments

GAO Contact

James Noel (202) 512-3591

Acknowledgments

In addition to the individual named above, Sally Thompson, Mark Connelly, Mike LaForge, Tram Le, Barbara House, and Stephanie Chen from our Financial Management and Assurance mission team and Robert Baney, Josephine Ballenger, and Delores Parrett from our Natural Resources and Environment mission team were key contributors to this report.

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